



NOAA Technical Memorandum NMFS F/NWC-185

Pacific Northwest and Alaska Exports of Edible Fishery Products, 1989

by
Richard K. Kinoshita
and Joseph M. Terry

August 1990

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

This TM series is used for documentation and timely communication of preliminary results, interim reports, or special purpose information, and has not received complete formal review, editorial control, or detailed editing.

PACIFIC NORTHWEST AND ALASKA EXPORTS OF EDIBLE FISHERY PRODUCTS, 1989

by

Richard K. Kinoshita and Joseph M. Terry

Resource Ecology and Fisheries Management Division
Alaska Fisheries Science Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
7600 Sand point Way N.E., BIN C15700
Seattle, Washington 98115-0070

August 1990

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

Pacific Northwest (Oregon, Washington, and Alaska) exports of edible fishery products in 1989 increased 28% in quantity over 1988 to just over one billion pounds (lb) or 461,164 metric tons (t), while the value of these fishery exports increased by only 3.6% to \$1.76 billion. A substantial rise in exports of finfish products contributed to the increase and offset the decline in salmon exports. Pacific salmon products account for \$877 million or just under 50% of the total value of Pacific Northwest exports, down from \$967 million or 57% in 1988. Exports of other finfish products in 1989 amounted to \$540 million, a 50% increase from 1988. The value of Pacific Northwest exports comprised 77.1% of total U.S. edible fishery exports, down slightly from 78.6% in 1988. In 1989, Pacific Northwest exports were shipped to 38 countries. The top six countries accounted for over 96% of the total. Increased trade with Japan, Canada, and the Republic of Korea accounted for most of the gain. Exports to Japan totaled \$1.43 billion or 81% of the total, slightly up in value from \$1.4 billion and down slightly from 82% in 1988. Canada was a distant second with \$127.3 million or 7.2% of the total exports, up from \$90.2 million and 5.3% in 1988. Pacific Northwest exports to the United Kingdom fell by \$10 million to \$56.5 million or 3.2% of the total exports, while shipments to the Republic of Korea rose to \$52.5 million or 3% from \$35.9 million or 2.1% in 1988.

Over-the-side deliveries by U.S. fishing vessels to foreign processing vessels (commonly called joint venture sales) off the Pacific Coast declined by one-half to 1.6 billion lb or 734,800 t, with an estimated value of \$111 million. These sales are not included in U.S. trade statistics: if they were included, Pacific Northwest exports of edible fishery products would total \$1.87 billion and they would comprise 78.2% of U.S. fishery exports.

THIS PAGE INTENTIONALLY LEFT BLANK

v
CONTENTS

	Page
Introduction	1
Pacific Northwest Exports	3
Major Products	9
Major Importers	12
Exports by Customs District and Season	17
Joint Ventures	21
References	28
Appendix	29

INTRODUCTION

Exports of edible fishery products from the Pacific Northwest and Alaska continue to make major contributions to both total U.S. fishery exports and earnings of the fishing industry of the Pacific Northwest and Alaska. This report compares exports of edible fishery products from the Pacific Northwest and Alaska to total U.S. fishery exports, examines major fishery products and major countries purchasing fishery products, examines changes in patterns in exports, reviews joint ventures sales, and updates Kinoshita et al. (1989).

The Pacific Northwest defined as the states of Oregon, Washington, and Alaska. The export data used in this report are from the U.S. Department of Commerce, Bureau of the Census, and maintained by the National Marine Fisheries Service (NMFS), Fishery Statistics Division, Silver Spring, Maryland. Pacific Northwest exports were extracted from the Import-Export database located at the Alaska Fisheries Science Center, Seattle, Washington.

There are two approaches that can be taken to identify Pacific Northwest exports of edible fishery products from total U.S. fishery exports. The first approach would select species or products attributable to species harvested in Oregon, Washington, and Alaska waters. Two serious problems arise when defining regional exports on the basis of species or product. First, large numbers of species are found in both Atlantic and Pacific Oceans, such as cod, flatfish, herring, crabs, shrimp, and squid. Second, there are significant exports in the various "other" categories or where products are not identified by species.

The approach used in this report employs data on exports shipped from the Oregon, Washington, and Alaska customs districts. This method covers the large volume of exports of salmon, groundfish, crabs, and herring. Also

included are the categories listed under other whole or dressed fish: other fish fillets; fish meal for human consumption; fish balls, cakes, and pudding; and fish sticks-a value of \$245 million or nearly 14% of the value of 1989 Pacific Northwest fishery exports. This approach is not without problems. First, it includes shipments of products that may have been harvested or processed in other regions and exported from one of the three states. Conversely, fishery products from the Pacific Northwest are also shipped to other regions of the United States, then exported. Both of these problems appear to be minor. There were 17 items that were likely to have originated from other regions, but they accounted for only 0.2% of the total value of Pacific Northwest exports. Most fishery products are shipped from the general area where they are harvested or processed if there are carriers servicing the destination countries on a regular basis. Much of the fish harvested in Alaska is shipped directly to the Pacific Rim countries. Other products may be shipped to Washington State, then exported--particularly when these products are sold to European countries.

A major change took place in 1989 as the new Harmonized System (HS) replaced the old Tariff Schedule of the United States (TSUSA). The new product codes in most cases provide greater detail by species, product, and condition. The new Harmonized System has 179 different categories compared to 62 under the old schedule. However, in several important cases for the Pacific Northwest, products were lumped into more general categories. The new system grouped frozen king crab, snow crab (opilio), snow crab (other), and Dungeness crab into one category. The HS also placed Pacific halibut with Greenland turbot, and pollock roe was grouped into an "other" fish roe category. Another omission was a separate category for surimi. Most products

are now separated into fresh/chilled and frozen categories. Categories were created for whole or dressed cod and flatfish and analog products. The new and old product categories are shown in Appendix Table A1 and A2, respectively. Scientific names of species identified in this report are listed in Appendix Table A3. Note that totals and percentages in the tables may not always agree because of rounding, and that percentage changes may not agree because they may have been calculated from unrounded data.

PACIFIC NORTHWEST EXPORTS

Pacific Northwest exports of edible fishery products in 1989 were valued at \$1.76 billion, an increase of 4% from 1988, and contributed 77.1% of the total U.S. exports of edible fishery products (Table 1). On the basis of product weight, the quantity of Pacific Northwest fishery exports amounted to 1,016.7 million pounds (lb) or 461,172 metric tons (t), an increase of 28% from 1988 (Table 2).

An upward trend in exports started in 1985, with a strong recovery of Pacific salmon stocks in Alaska and the growth of the domestic groundfish fishery in the North Pacific waters off Alaska (Fig. 1). Since 1984, Pacific Northwest fishery exports have increased by 129% in quantity, 172% in nominal value, and 132% in constant dollar value.

Sales by U.S. fishing vessels to foreign processing vessels in the U.S. exclusive economic zone (EEZ), commonly known as jointventure sales, have not been included in official U.S. merchandise trade statistics. If joint venture sales of fish caught off the Pacific Coast are added to other fishery exports, the 1989 Pacific Northwest exports would total \$1.87 billion and these would account for 78.2% of total U.S. exports of edible fishery products (Fig. 2).

Table 1. -Pacific Northwest exports of edible fishery products (millions of dollars) excluding and including joint venture sales and percent of total U.S. exports of edible fishery products, 1981-89.

Year	<u>Excluding joint ventures</u>			<u>Including joint ventures</u>		
	Pacific Northwest	Total U.S.	% Total U.S.	Pacific Northwest	Total U.S.	% Total U.S.
1981	\$ 805	\$1,073	75.0	\$ 818	\$1,094	74.8
1982	739	999	74.0	775	1,035	74.9
1983	668	908	73.6	715	959	74.6
1984	648	842	77.0	724	921	78.6
1985	837	1,010	82.9	940	1,115	84.3
1986	1,034	1,290	80.2	1,187	1,445	82.1
1987	1,232	1,578	78.1	1,432	1,792	79.9
1988	1,700	2,162	78.6	1,920	2,383	80.6
1989	1,761	2,283	77.1	1,872	2,395	78.2

Sources: U.S. Dep. Commer., Bureau of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070; and Natl. Mar. Fish. Serv., Fisheries of the United States, 1988, Silver Spring, MD 20910.

Table 2. -Pacific Northwest exports of edible fishery products, 1988-89, quantity (million lb) and value (million dollars), percent change in quantity and value from 1988 to 1989.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
FRESH & FROZEN						
Whole/dressed						
Salmon						
Coho	17.7	33.9	+91	\$ 53.6	\$ 67.6	+26
Chum	54.3	36.3	-33	101.2	50.1	-51
Pink	50.7	47.2	-7	86.3	50.8	-41
Sockeye	136.8	187.5	+37	490.5	506.7	+3
Other	20.3	12.9	-37	57.2	32.1	-44
Subtotal	279.7	317.8	+14	788.8	705.3	-11
Groundfish						
Cod	NA	41.2	—	NA	40.6	—
Flatfish	NA	31.6	—	NA	44.0	—
Pollock	3.6	8.1	+123	3.7	4.4	+19
Sablefish	41.0	48.4	+18	86.4	81.5	-6
Other	144.1	82.6	-43	146.7	77.1	-47
Subtotal	188.6	211.9	+12	236.9	247.5	+4
Halibut	5.4	17.4	+224	10.0	24.6	+146
Herring	66.8	48.7	-27	69.8	32.0	-54
Fillets & steaks						
Cod	10.4	1.1	-89	15.9	1.4	-91
Halibut	1.5	1.7	+10	2.6	2.4	-7
Herring	18.8	NA	—	17.5	NA	—
Salmon	1.3	7.4	+491	3.0	16.3	+445
Other	27.9	25.1	-10	30.2	24.5	-19
Crab	65.6	80.1	+22	230.7	240.7	+4
Shrimp	2.5	3.9	+54	8.7	12.5	+44
Fish balls, cakes, puddings	46.4	53.9	+16	40.5	52.6	+30
Analog products	NA	4.3	—	NA	3.8	—
CANNED						
Salmon						
Pink	12.9	16.4	+28	29.2	32.6	+11
Sockeye	11.4	13.5	+18	36.3	36.7	+1
Other	6.7	4.7	-30	20.3	8.9	-56
Subtotal	31.0	34.6	+12	85.8	78.1	-9

Table 2.—Continued.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
ROE						
Herring	13.0	20.4	+57	\$ 27.5	\$ 24.8	-10
Salmon	17.4	18.1	+4	88.2	71.3	-19
Other	4.8	21.6	+353	12.7	73.0	+475
Cod, salted	7.1	12.7	+78	9.4	13.4	+43
N.E.S.	<u>7.6</u>	<u>136.0</u>	<u>+1684</u>	<u>22.0</u>	<u>136.6</u>	<u>+522</u>
TOTAL	795.7	1,016.7	+28	\$1,700.1	\$1,760.8	+4

N.E.S. - Not elsewhere specified. NA - Not available.

Note: Discrepancies in totals are due to rounding and percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; and Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

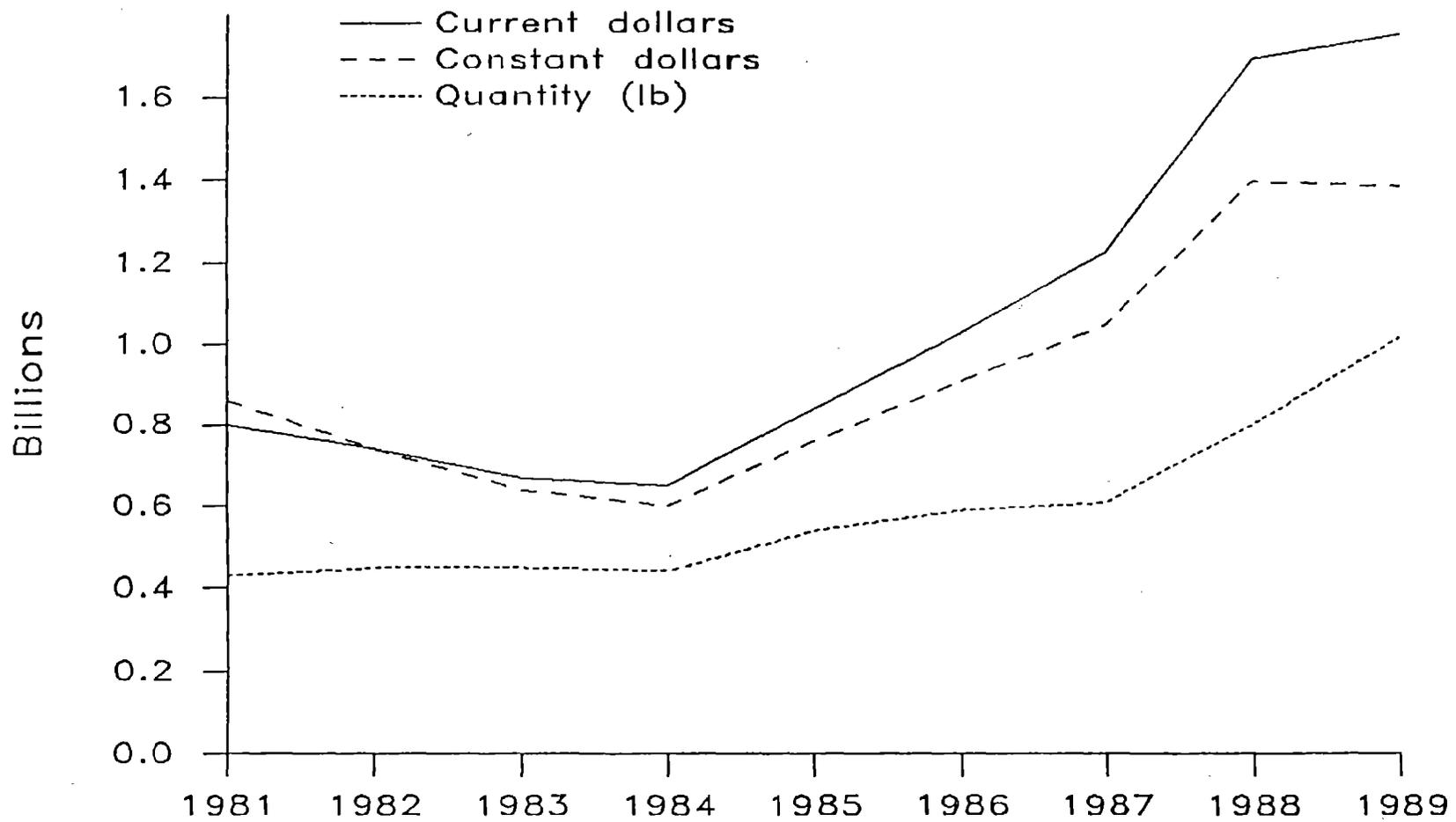


Figure 1.—Quantity and current and constant dollar values of Pacific Northwest exports of edible fishery products, 1981-89. Deflated by GNP implicit price deflator.

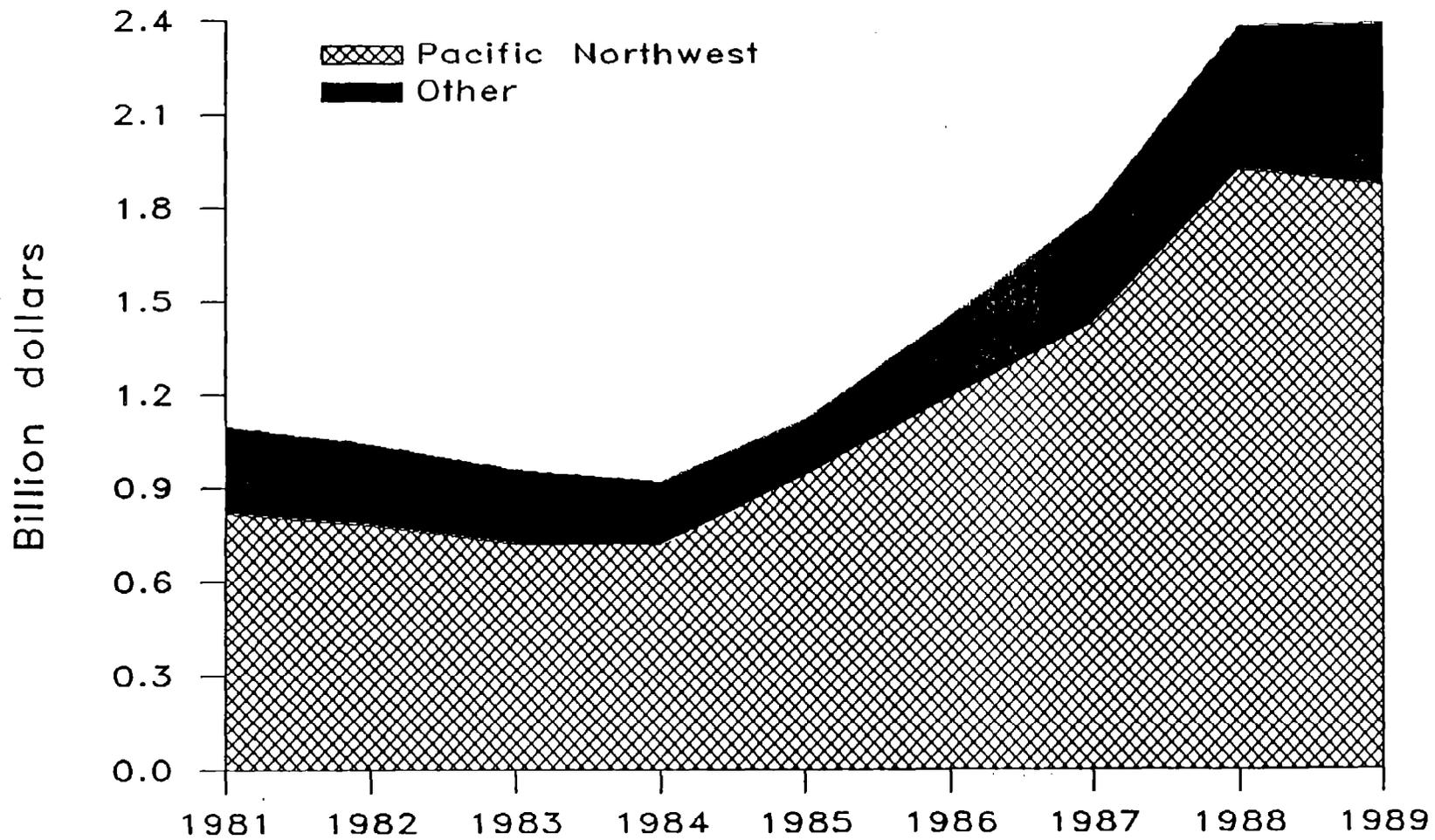


Figure 2.--Pacific Northwest and total U.S. exports of edible fishery products, 1981-89.
Includes jointventure sales.

Joint venture sales rose sharply between 1979 and 1987; however, the catch declined slightly in 1988, then fell by about one-half in 1989 as the domestic fishery continued to and replaced the joint venture fishery.

Major Products

The major products and product groups for 1988-89 are listed in Table 2; Table 3 is a summary of the Pacific Northwest exports in more general product groups. Pacific salmon products accounted for \$877 million or 49.8% of fishery exports, followed by "other" finfish^{1/} (\$540 million or 30.7%), crab (\$241 million or 13.7%), and Pacific herring (\$58 million or 3.3%). The quantity of Pacific Northwest Pacific salmon exports in 1989 increased from 1988 by 15%, but lower prices caused the 9% decline in value. The quantity of whole or dressed salmon in 1989 increased 14% from 1988, while the value declined by 11% as average prices were 21% below a year earlier. In 1989, canned salmon exports were up by 12% in quantity, but the value dropped by 9% from 1988. Supplies of canned, and fresh and frozen Pacific salmon were augmented by a 35% increase in the Alaska salmon catch to 713 million lb and by a 132% increase in the canned pack. Export data on total salmon, whole or dressed salmon, and canned salmon by country of destination are shown in Appendix Tables A4, A5, and A6, respectively. Pacific Northwest exports by product groups with joint venture sales included with groundfish exports are shown in Figure 3.

The exports of other fresh, frozen, canned, cured, and processed finfish (other than salmon, herring, and non-groundfish species) increased from \$358 million in 1988 to \$540 million in 1989. This category is made up of \$81.5

^{1/} All groundfish species and "other" categories, and all product forms excluding herring, salmon, and non-groundfish species.

Table 3.-Pacific Northwest exports of edible fishery products or product groups (million dollars) and percent of total, 1981-89.

Year	Salmon	Herring	Other finfish*	Crab	Other	Total
Value						
1981	\$572	\$ 57	\$ 30	\$106	\$40	\$ 805
1982	531	60	25	87	36	739
1983	510	67	23	40	29	668
1984	480	60	47	36	25	648
1985	597	104	66	53	17	837
1986	707	78	126	107	16	1,034
1987	728	93	204	184	24	1,232
1988	967	115	358	231	29	1,700
1989	877	58	540	241	45	1,761
Percent						
1981	71.0	7.1	3.7	13.2	5.0	100.0
1982	71.9	8.1	3.3	11.8	4.9	100.0
1983	76.4	10.0	3.4	6.0	4.3	100.0
1984	74.1	9.3	7.2	5.5	3.9	100.0
1985	71.3	12.4	7.9	6.4	2.0	100.0
1986	68.4	7.5	12.2	10.4	1.5	100.0
1987	59.1	7.5	16.6	14.9	1.9	100.0
1988	56.9	6.8	21.0	13.6	1.7	100.0
1989	49.8	3.3	30.7	13.7	2.5	100.0

* Other fresh, frozen, canned, cured, roe, and processed finfish excluding salmon, herring, and other nongroundfish species.

Note: Discrepancies in totals are due to rounding.

Sources: U.S. Dep. Commer., Bureau of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; and Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

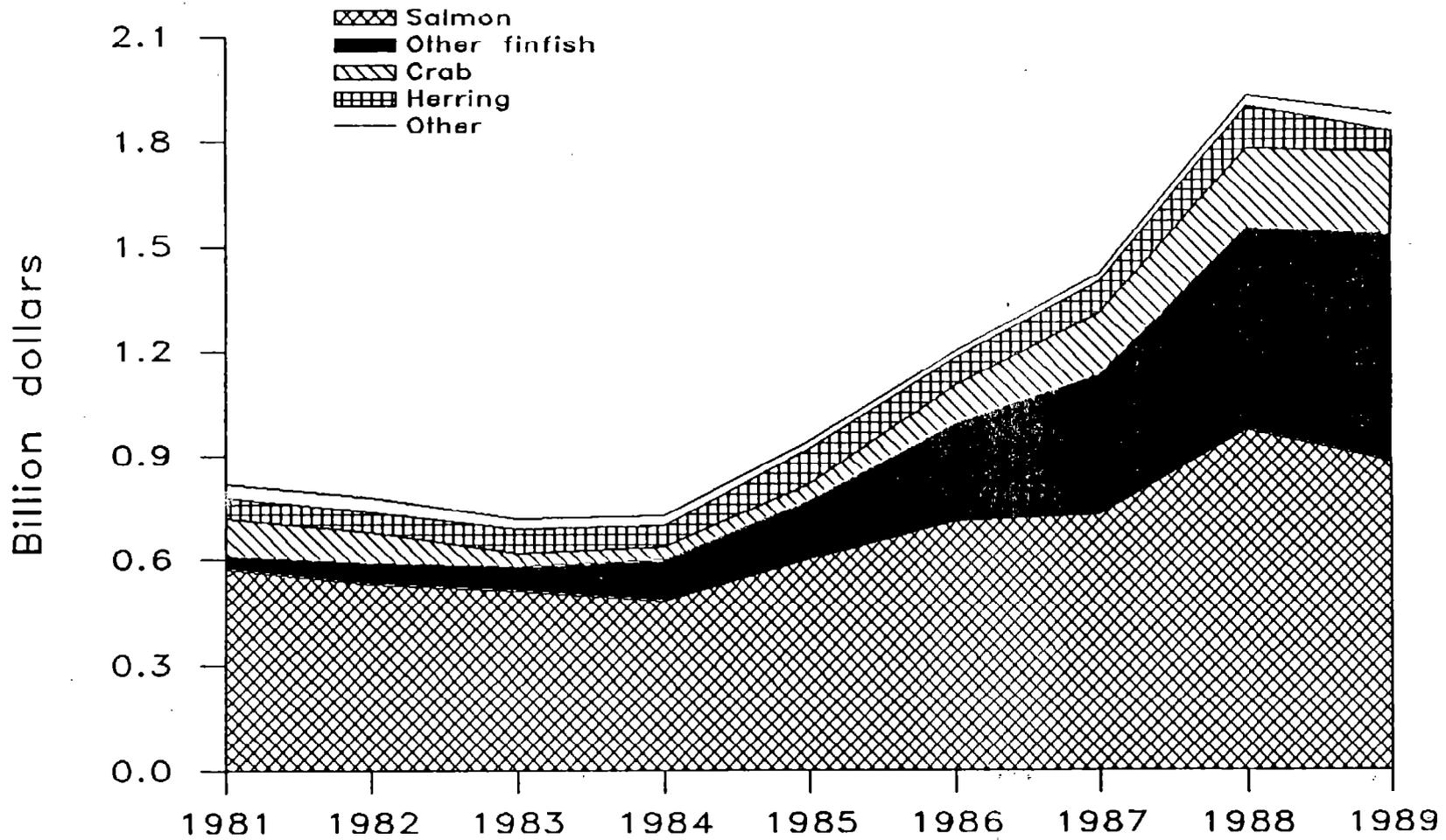


Figure 3.-Pacific Northwest exports of edible fishery products by major product groups, 1981-89. Includes jointventure sales.

million in sablefish, \$40.6 million in cod, \$44 million in flatfish, \$26 million in fillets, \$73 million in fish roe, \$52.6 million in fish cakes, etc. **The increase in the finfish group indicates the rapid expansion of both the domestic catcher/processor fleet operating in waters off Alaska and the shoreside plants (Terry et al. 1990).** Another outgrowth of the increase in the groundfish fleet is the explosive growth of U.S. -produced surimi. There were 14 at-sea surimi processors and 4 shoreside plants in operation in 1989, with an estimated production of 220 million lb (100,000 t) or about double the 1988 production (Atkinson 1989). It is estimated that 154-165 million lb (70-75,000 t) of surimi was exported in 1989 based on industry and Japanese trade data. Only a portion of the surimi exports is recorded in a category listed as fish cakes, balls, and pudding, and the remainder may be in any of five other categories. Quantities of fish cakes, balls, and pudding increased from 6.3 million lb in 1987 to 53.9 million lb in 1989 and are valued at \$52.6 million.

Beginning in 1989, arts of fresh and frozen, whole or crab sections are no longer identified by species and are lumped into one category. Exports of fresh and frozen crab and crabmeat totaled 80 million lb in 1989 and were valued at \$240.7 million, up 22% by quantity and 4% by value compared to 1988. Reduced stocks of king crab and large snow crab (bairdi) continued to limit the harvest and exports, although catches were up slightly in 1989. Stocks of small snow crab (opilio) remain strong.

Major Importers

Pacific Northwest exports of edible fishery products were sold to 38 countries in 1989, with Japan dominating the export market and the top six countries purchasing over 96% of the total (Tables 4 and 5, and Fig. 4).

Table 4.--Quantity (million lb) and value (million dollars) of Pacific Northwest edible fishery products exported to the top 15 countries for 1988 and 1989, and percent change, 1988-89.

Country	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Japan	648.2	791.3	+22	\$1,401.3	\$1,430.6	+2
Canada	44.6	81.4	+83	90.4	127.3	+41
United Kingdom	26.8	26.6	-1	66.0	56.5	-14
Rep. of Korea	25.9	48.2	+86	35.9	52.5	+46
France	12.2	10.5	-14	31.2	18.0	-42
Australia	6.2	7.3	+17	15.3	16.2	+6
Portugal	7.2	12.7	+77	9.5	13.5	+42
Taiwan	3.9	16.9	+330	4.3	9.1	+111
Netherlands	2.9	4.7	+62	7.6	8.2	+8
Sweden	3.4	3.3	-4	7.3	6.5	-10
Fed. Rep. of Germ.	3.7	2.4	-34	7.5	6.2	-17
Norway	0.4	4.5	+1,074	1.1	4.1	+283
Belgium & Lux.	2.6	2.2	-14	6.6	3.9	-41
Hong Kong	0.8	1.1	+36	1.8	2.4	+31
Denmark	3.2	0.9	-72	6.7	1.5	-78
Other	3.7	2.7	-27	7.6	4.4	-42
Total	795.7	1,016.7	+28	\$1,700.1	\$1,760.8	+4

Note: Discrepancies in totals are due to rounding.
Percentages are based on unrounded data.

Sources: U.S. Dep. Commer., Bureau of the Census, data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; and Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table 5. -Value (million dollars) and percent of Pacific Northwest edible fishery products exported to the top six countries, 1982-89.

Country	1982	1983	1984	1985	1986	1987	1988	1989
Value								
Japan	\$540.8	\$455.5	\$451.2	\$639.9	\$ 776.8	\$ 936.7	\$1,401.3	\$1,430.6
Canada	55.3	62.0	54.4	60.8	71.6	92.5	90.4	127.3
United Kingdom	30.9	52.6	51.1	43.5	71.1	58.4	66.0	56.5
Rep. of Korea	13.1	12.5	10.1	18.0	26.7	31.5	35.9	52.5
France	40.4	24.8	25.1	24.1	34.4	48.9	31.2	18.0
Australia	8.2	12.5	13.2	11.9	12.5	14.3	15.3	16.2
Other	<u>50.1</u>	<u>48.0</u>	<u>42.7</u>	<u>38.5</u>	<u>40.7</u>	<u>49.5</u>	<u>60.0</u>	<u>59.7</u>
Total	\$738.8	\$667.9	\$647.8	\$836.7	\$1,033.7	\$1,231.8	\$1,700.1	\$1,760.8
Percent								
Japan	73.2	68.2	69.6	76.5	75.1	76.0	82.4	81.3
Canada	7.5	9.3	8.4	7.3	6.9	7.5	5.3	7.2
United Kingdom	4.2	7.8	7.9	5.2	6.9	4.7	3.9	3.2
Rep. of Korea	1.8	1.9	1.6	2.1	2.6	2.6	2.1	3.0
France	5.4	3.7	3.9	2.9	3.3	4.0	1.9	1.0
Australia	1.1	1.9	2.0	1.4	1.2	1.2	0.9	0.9
Other	<u>6.8</u>	<u>7.2</u>	<u>6.6</u>	<u>4.6</u>	<u>3.9</u>	<u>4.0</u>	<u>3.5</u>	<u>3.4</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Discrepancies in totals are due to rounding.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; and Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

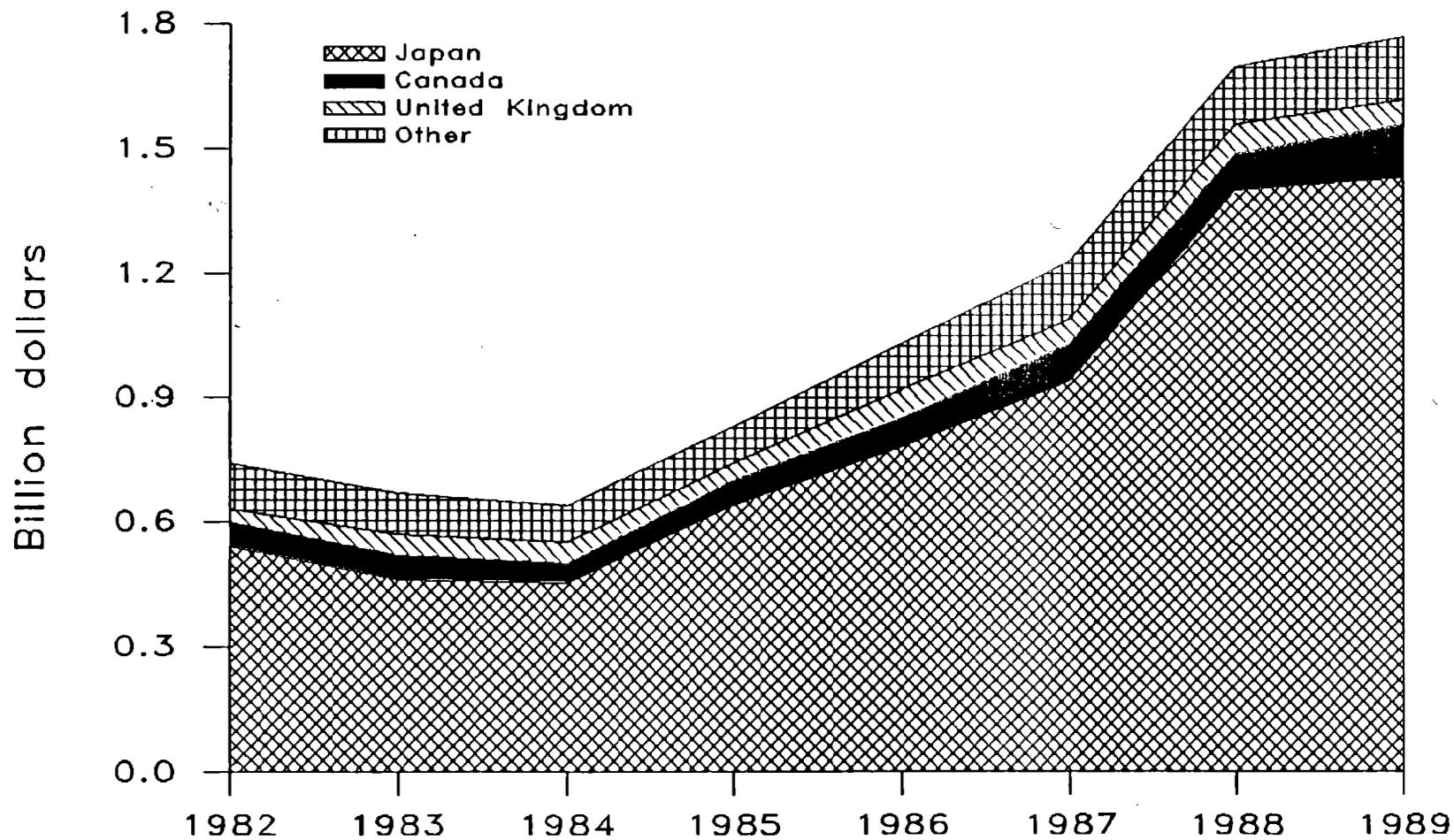


Figure 4.—Pacific Northwest exports of edible fishery products by country of destination, 1982-89.

Japan was the major buyer of fishery products, importing \$1.43 billion or 81.3% of the total value. In the 1982-89 period, purchases by the Japanese ranged from 68 to 82% of Pacific Northwest fishery exports. In 1989, the Japanese were leading buyers of whole or dressed Pacific salmon (88%), whole Pacific herring (95%), sablefish (99%), crab (95%), Pacific salmon roe (97%), and Pacific herring roe (95%) (Appendix Table A7). Exports of the single most important category sold to Japan, whole or dressed salmon, rose by nearly 10% in quantity, but fell by 10% in value to over \$621 million in 1989. Products that contributed to the overall increase were "other" whole or dressed finfish, other fish roe, crab, and various categories that included surimi.

The 2% increase in the value of exports to Japan compared to the 22% increase in the quantity, resulted in part by lower prices in the United States, by the increase in the yen value of the U.S. dollar, and also by a weaker Japanese salmon market. The value of the U.S. dollar increased 7.6% in 1989 to 138 yen from 128 yen in 1988. The value of Pacific Northwest exports was 197.4 billion yen in 1989, up 10% from 1988.

Canada was a distant second, with purchases of \$127 million or 7.2% of the total Pacific Northwest fishery exports. Increased purchases of whole or dressed salmon, halibut, and canned salmon contributed to the 83% increase in the quantity of exports and the 41% increase in their value (Appendix Table A8).

The United Kingdom was the third largest importer at \$56.5 million, a drop of 14% from 1988, based on lower prices for their purchases of canned Pacific salmon (Appendix Table A9). Canned salmon exports amounted to 17 million lb, up 6% from 1988, but their value dropped by 17% to \$39.6 million. The United Kingdom was the leading buyer of canned salmon, with just

over 50% of the canned salmon exports.

Following the United Kingdom, Pacific Northwest fishery exports to the Republic of Korea were fourth--increasing 86% in quantity and 46% in value from 1988 (Appendix Table A10). Increased shipments of whole or dressed finfish, surimi, and fish roe contributed to the gain, while lower exports of whole or dressed salmon and crab offset some of the increase.

Exports to France ranked fifth with exports falling 14% in quantity and 42% in value. This drop was due to the 22% decline in exports of whole or dressed Pacific salmon, with a 51% drop in value (Appendix Table A11). Whole or dressed salmon still comprised 74% or \$13.3 million of fishery exports to France.

The sixth ranking country was Australia with \$16.2 million in export purchases, up only 6% from 1988 in spite of a 17% increase in the quantity (Appendix Table A12). Nearly 89%, or \$14.4 million, were exports of canned salmon. Australia was the third leading buyer of canned salmon accounting for 18% of total canned salmon exports from the Pacific Northwest.

Exports by Customs District and Season

Pacific Northwest fishery exports by customs districts of Alaska, Washington, and Oregon are shown in Table 6 and 7. By volume, 684 million lb or 67% of exports in 1989 went through the Alaska customs district, compared to 322 million lb or 31.6% from Washington, and 11 million lb or 1.1% from Oregon. Exports differed in value: \$1.06 billion or 60.3% of the total from Alaska, \$674 million or 38.3% from Washington, and \$25 million or 1.4% from Oregon (Fig. 5).

As shown in Table 6, \$1.5 billion or 86% of Pacific Northwest fishery exports were headed for the Pacific Rim countries; 81% of the total value went

Table 6.--Quantity (thousands of pounds), value (thousands of dollars), and percent of total 1989 value of Pacific Northwest edible fishery products exported by customs district to area or country of destination.

District	Asia*	Europe	Canada	Other	Total
Quantity					
Alaska	648,010	15,323	20,365	—	683,699
Washington	206,908	53,461	61,058	318	321,745
Oregon	11,205	177	—	38	11,419
Total	866,123	68,961	81,423	356	1,016,683
Value					
Alaska	\$1,028,399	\$ 15,083	\$ 18,815	—	\$1,062,296
Washington	459,681	105,004	108,485	\$599	673,769
Oregon	24,474	228	—	54	24,757
Total	\$1,512,554	\$120,315	\$127,301	\$653	\$1,760,822
Percent of total value					
Alaska	58.4	0.8	1.1	—	60.3
Washington	26.1	6.0	6.2	0.0	38.3
Oregon	1.4	0.0	—	0.0	1.4
Total	85.9	6.8	7.2	0.0	100.0

* Includes Australia.

Note: Discrepancies in totals are due to rounding.

Sources: U.S. Dep. Commer., Bureau of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; and Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table 7. --Pacific Northwest exports of edible fishery products by customs districts in percentage of the total for each year from 1977 to 1989.

Year	Quantity (%)			Value (%)		
	Oregon	Washington	Alaska	Oregon	Washington	Alaska
1977	2.1	83.3	14.6	2.2	81.6	16.2
1978	2.5	68.3	29.3	2.4	65.1	32.5
1979	2.8	51.6	45.6	1.9	51.6	46.5
1980	1.4	55.4	43.2	1.4	59.5	39.1
1981	1.4	53.9	44.7	1.5	57.5	41.0
1982	2.0	42.4	55.6	2.3	50.1	47.6
1983	1.3	40.6	58.1	1.6	48.8	49.6
1984	1.8	43.8	54.4	1.8	53.9	44.3
1985	1.7	39.5	58.8	1.7	45.6	52.7
1986	1.5	45.5	53.1	1.9	49.0	49.2
1987	1.6	46.4	52.0	1.8	51.6	46.6
1988	1.6	34.5	63.9	2.2	44.3	53.5
1989	1.1	31.6	67.3	1.4	38.3	60.3

Note: Discrepancies in percentages not adding to 100 percent are due to rounding.

Sources: U.S. Dep. Commer., Bureau of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; and Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

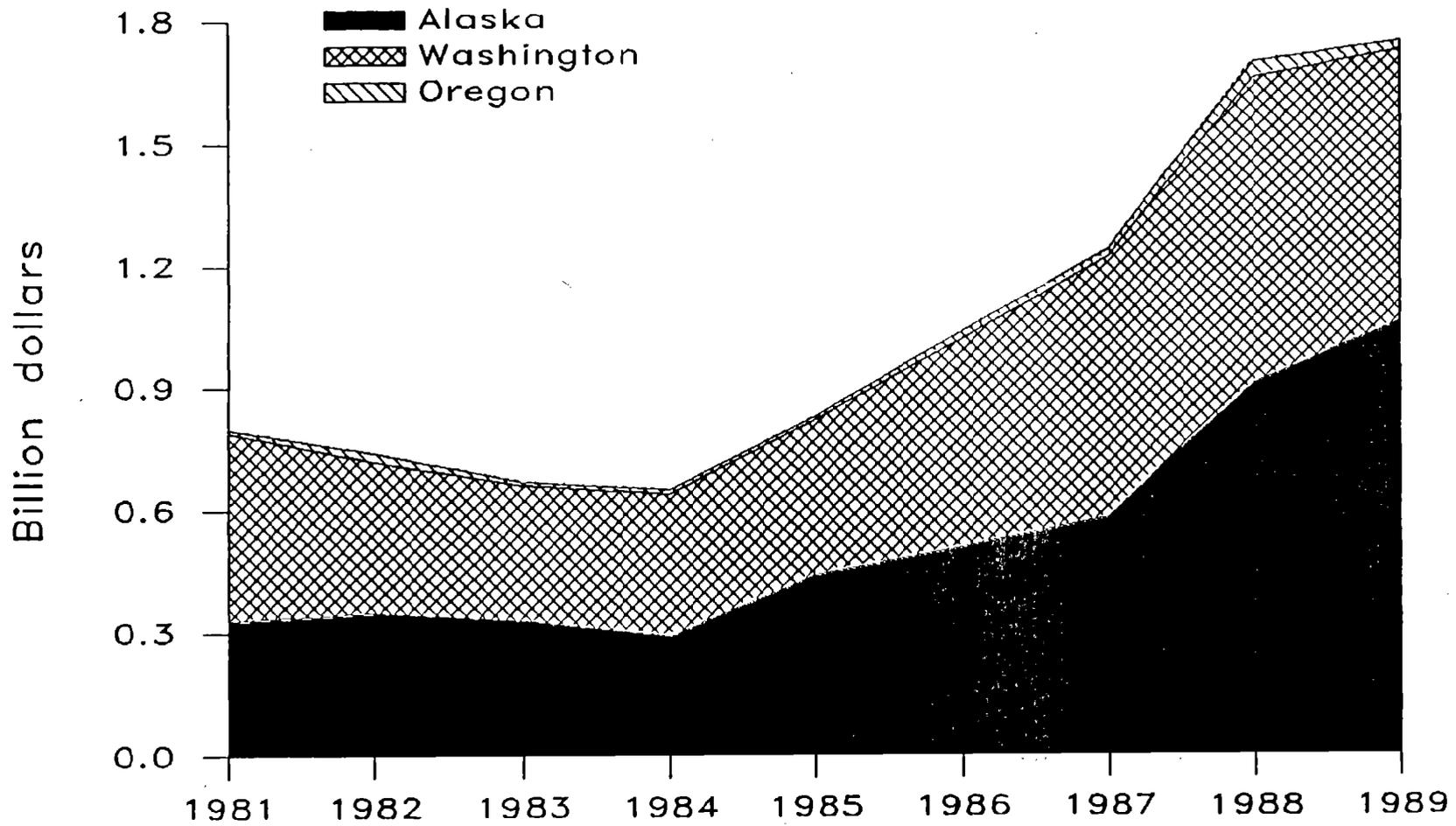


Figure 5.—Pacific Northwest exports of edible fishery products by customs district, 1981-89.

to Japan. Exports to Europe totaled \$120 million or 6.8% of total exports with \$105 million shipped from Washington.

The seasonality of exports reflects the seasonality of the fisheries. The percentages of exports by month and customs district are shown in Table 8. Pacific salmon exports dominate the seasonal pattern based on its high volume and value, particularly the large shipments in July and August (Fig. 6).

JOINT VENTURE

Joint venture sales are currently classified as imports by most countries, but they are not classified as fishery exports in official U.S. trade statistics. Joint venture sales are catches by U.S. fishermen that are transferred on the fishing grounds to foreign processing vessels in the EEZ. Joint venture catch and value in the U.S. EEZ off the Pacific Coast increased annually from 553 million lb (250,975 t) and \$35.6 million in 1982 to 3.29 billion lb (1.49 million t) and \$200 million in 1987 (Table 9). The catch declined slightly in 1988 to 3.15 billion lb (1.43 million t) and \$220 million, and declined by about half in 1989 to 1.6 billion lb (734,800 t) and \$110.8 million as the result of the increase catch allocated to the domestic processing sector (Fig. 7 and 8). The walleye pollock catch declined 65% from a year earlier to 634 million lb or 39% of the joint venture catch and 36% of the total. value. Deliveries of Pacific cod and flatfish dropped by 60 and 41%, respectively. Only the cat& of Pacific whiting increased, up 62% from 1988 to 448.8 million lb in 1989.

Table 8.--Monthly percentages by quantity and value of pacific Northwest edible fishery products exported by customs districts and districts combined, 1988-89.

Month	Oregon		Washington		Alaska		Combined	
	1988	1989	1988	1989	1988	1989	1988	1989
Quantity								
January	2.8	4.8	4.5	4.0	2.5	3.7	3.2	3.8
February	2.7	9.0	4.2	7.1	7.6	6.8	6.3	7.0
March	6.8	14.6	6.6	7.4	7.2	10.7	7.0	9.7
April	5.8	4.7	6.7	5.8	6.8	6.6	6.8	6.3
May	6.1	8.6	8.7	7.7	9.1	8.6	8.9	8.4
June	9.3	4.4	5.6	5.8	12.1	8.1	9.8	7.3
July	17.5	14.1	14.3	9.1	22.9	21.3	19.9	17.4
August	13.2	21.0	17.9	20.0	13.4	13.7	15.0	15.7
September	17.2	6.7	11.0	11.0	7.1	8.0	8.6	8.9
October	12.2	3.6	9.5	9.2	4.3	4.7	6.2	6.1
November	4.6	3.0	5.2	6.2	4.3	3.5	4.6	4.3
December	<u>1.8</u>	<u>5.5</u>	<u>5.8</u>	<u>6.7</u>	<u>2.7</u>	<u>4.3</u>	<u>3.7</u>	<u>5.1</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Value								
January	3.0	5.5	3.6	3.9	1.9	2.3	2.7	2.9
February	1.9	7.5	4.2	8.0	7.2	8.9	5.7	8.5
March	4.9	8.0	6.0	7.7	6.7	12.3	6.3	10.5
April	6.0	3.8	5.3	4.6	4.8	5.5	5.0	5.1
May	5.8	7.5	6.0	6.3	6.7	6.5	6.4	6.5
June	8.1	6.0	4.9	5.5	11.0	7.2	8.2	6.5
July	17.8	15.4	17.0	9.3	33.8	30.3	26.0	22.1
August	15.0	24.8	20.0	21.5	14.1	12.2	16.8	15.9
September	18.2	8.3	11.6	10.5	5.9	5.2	8.8	7.3
October	13.1	4.3	11.1	9.5	4.1	5.4	7.4	7.0
November	5.1	4.1	5.5	7.1	2.4	2.0	3.8	4.0
December	<u>1.1</u>	<u>4.8</u>	<u>4.8</u>	<u>6.1</u>	<u>1.4</u>	<u>2.2</u>	<u>2.9</u>	<u>3.7</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: U.S. Dep. Commer. Bureau of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; and Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

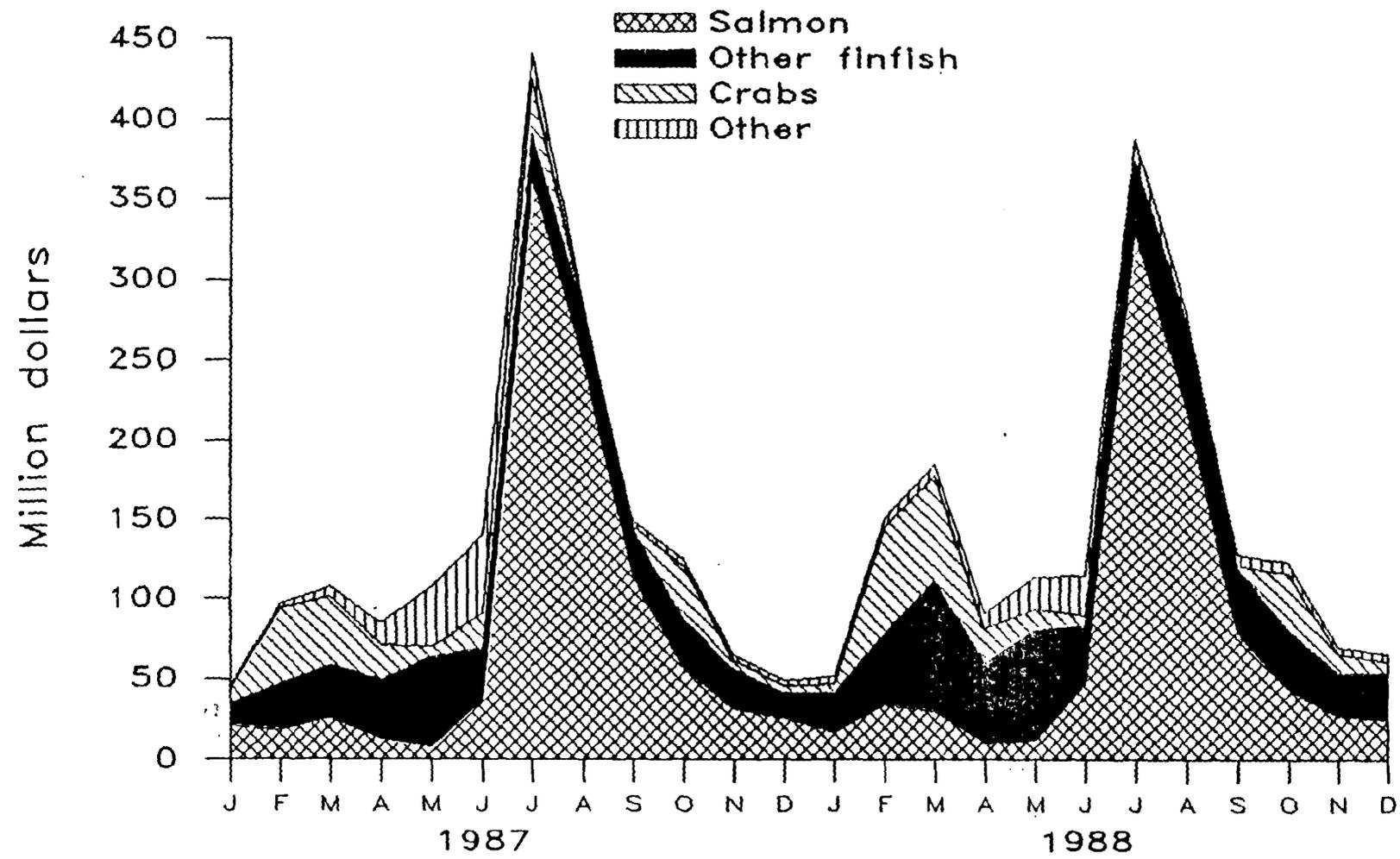


Figure 6.—Monthly Pacific Northwest exports of edible fishery products by major product groups, 1988-89.

Table 9. --Pacific Coast joint venture catch by species, quantity (million lb), value (million dollars), and percentage of the value, 1982-89.

Species	1982	1983	1984	1985	1986	1987	1988	1989
Quantity								
Atka mackerel	27.5	24.9	80.5	87.5	70.5	66.3	43.2	0.1
Pacific cod	30.1	37.0	78.1	96.0	144.0	132.6	245.7	98.4
Flatfish	58.8	81.6	118.2	386.2	480.2	491.2	728.3	427.0
Walleye pollock	284.1	624.2	979.1	1,356.7	1,979.1	2,353.0	1,821.9	634.4
Rockfish	0.1	5.3	6.2	1.8	1.7	2.4	4.6	0.5
Sablefish	0.3	0.9	1.9	0.7	1.1	0.7	0.1	0.0
Pacific whiting	148.7	159.0	173.9	69.9	180.0	233.7	277.3	448.8
Other	<u>3.7</u>	<u>4.4</u>	<u>8.8</u>	<u>19.1</u>	<u>17.4</u>	<u>13.9</u>	<u>26.4</u>	<u>10.7</u>
Total	553.3	937.3	1,446.6	2,017.9	2,873.9	3,293.8	3,147.7	1,619.9
Value								
Atka mackerel	\$ 1.9	\$ 1.5	\$ 5.6	\$ 6.1	\$ 4.8	\$ 4.8	\$ 3.6	\$ 0.0
Pacific cod	3.0	3.5	8.5	9.3	14.5	15.3	30.4	12.5
Flatfish	4.0	5.3	7.6	24.2	28.9	33.3	53.8	33.8
Walleye pollock	16.0	26.1	41.6	59.8	95.3	134.3	116.1	40.4
Rockfish	0.0	0.0	0.1	0.1	0.1	0.3	0.7	0.1
Sablefish	0.0	0.1	0.4	0.1	0.1	0.0	0.0	0.0
Pacific whiting	10.4	10.2	11.4	3.8	8.8	11.7	14.6	23.6
Other	<u>0.3</u>	<u>0.3</u>	<u>0.7</u>	<u>1.1</u>	<u>0.8</u>	<u>0.6</u>	<u>1.1</u>	<u>0.4</u>
Total	\$35.6	\$47.0	\$75.9	\$104.5	\$153.2	\$200.4	\$220.3	\$110.8

Table 9.--Continued.

Species	1982	1983	1984	1985	1986	1987	1988	1989
Percentage of value								
Atka mackerel	5.3	3.2	7.4	5.8	3.1	2.4	1.7	0.0
Pacific cod	8.4	7.5	11.2	8.9	9.5	7.6	13.8	11.3
Flatfish	11.2	11.3	10.0	23.2	18.8	16.6	24.4	30.5
Walleye pollock	45.0	55.5	54.8	57.2	62.2	67.0	52.7	36.5
Rockfish	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.1
Sablefish	0.0	0.2	0.5	0.1	0.1	0.0	0.0	0.0
Pacific whiting	29.2	21.7	15.0	3.6	5.7	5.8	6.6	21.3
Other	<u>0.9</u>	<u>0.6</u>	<u>0.9</u>	<u>1.1</u>	<u>0.5</u>	<u>0.3</u>	<u>0.5</u>	<u>0.3</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Discrepancies in totals are due to rounding.

Sources: Pacific Marine Fisheries Commission, Pacific Fisheries Information Network, 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070; and Natl. Mar. Fish. Serv., Fisheries of the United States, 1988, Silver Spring, MD 20910.

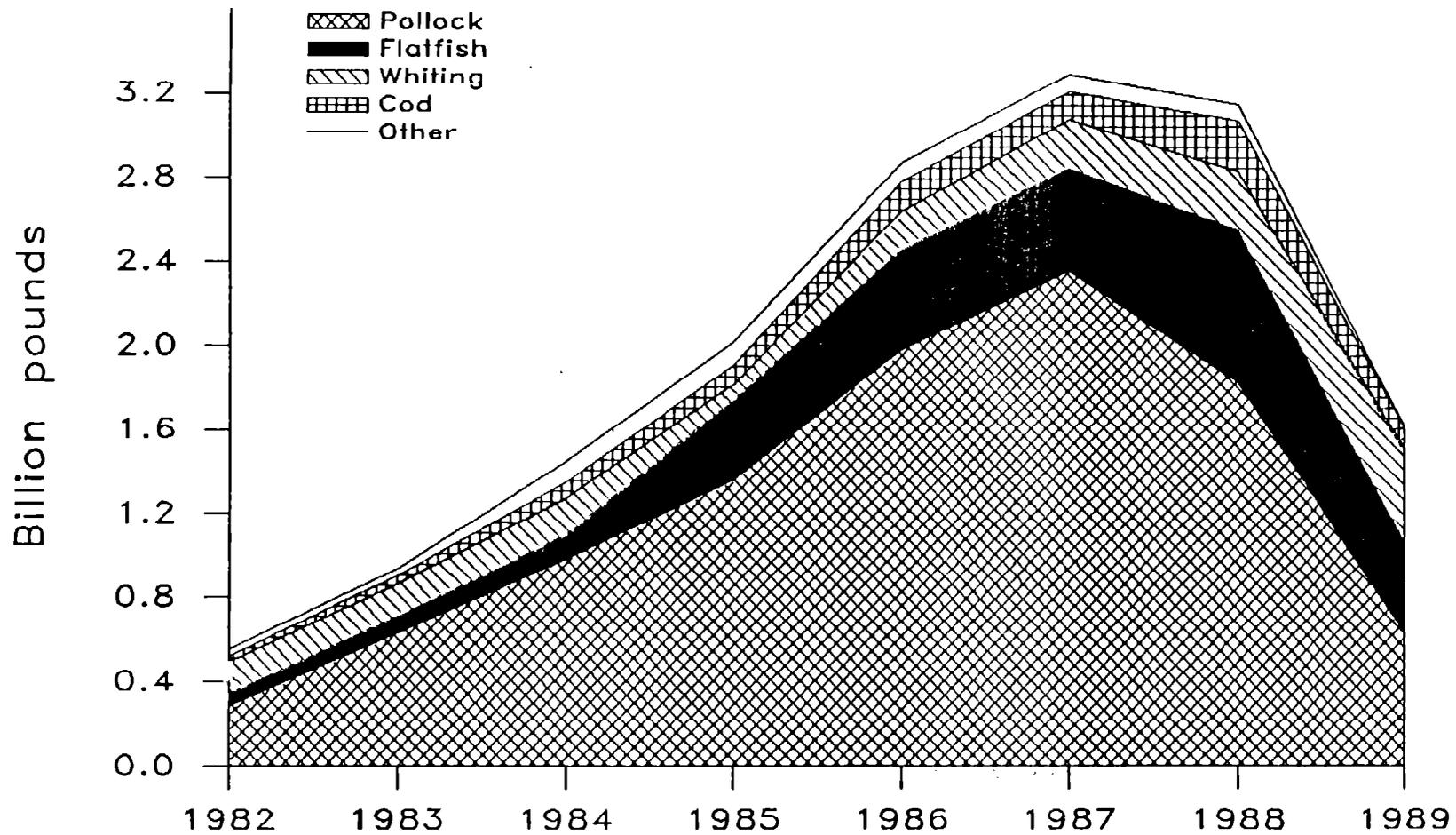


Figure 7.--Pacific Coast joint venture catch by species, 1982-89.

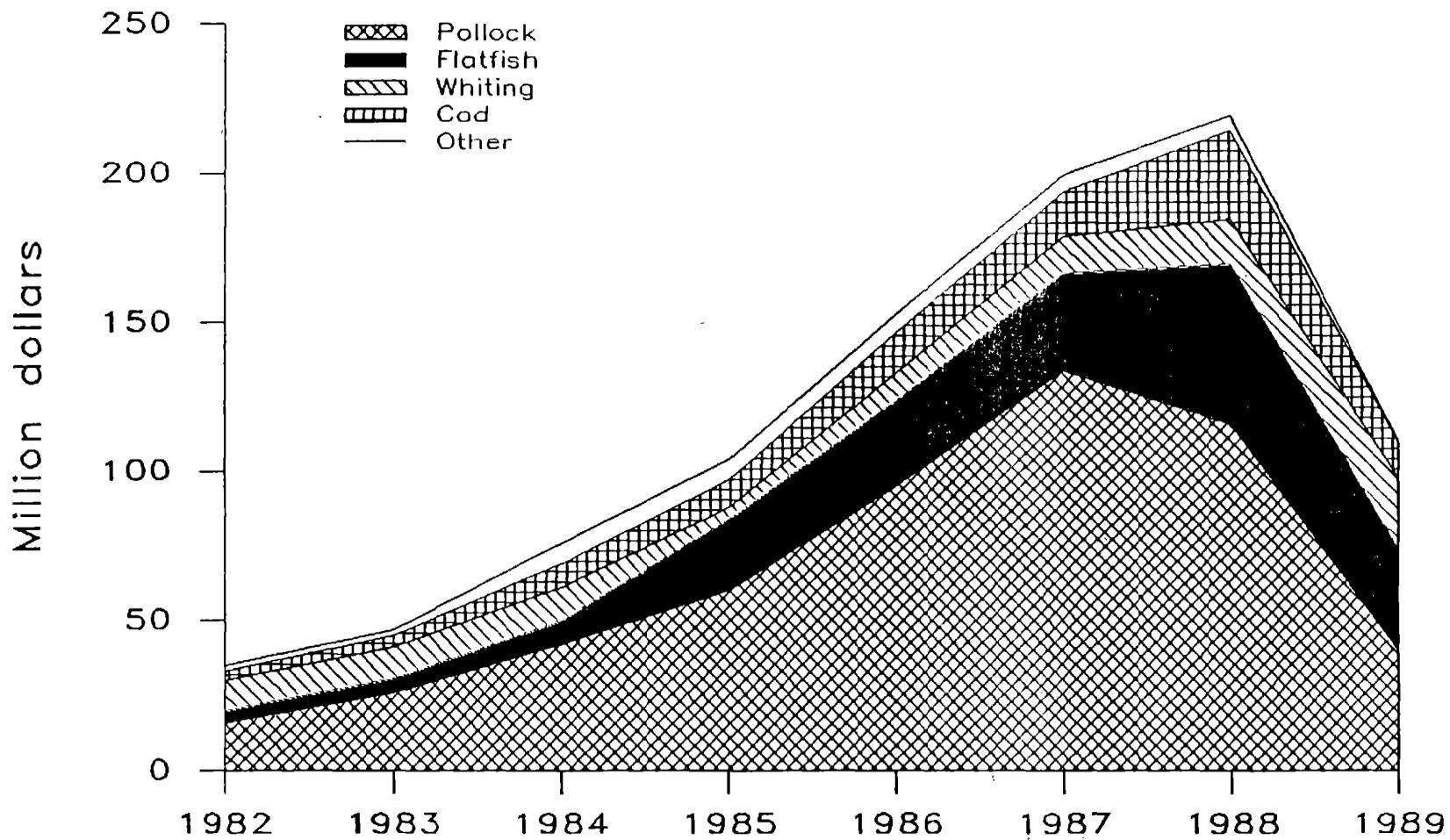


Figure 8.—Value of the Pacific Coast joint venture catch by species, 1982-89.

REFERENCES

- Atkinson, B. 1989. Bill Atkinson's News Report. Issue 329, Dec. 20, 1989, p. 2. Available 8000 crest Dr. N.E., Seattle, WA 98115.
- Kinoshita, R. K., K. Landen, and J. M. Terry. 1989. Pacific Northwest and Alaska exports of edible fishery products, 1988. U.S. Dep. Commer., NOAA Tech. Memo. F/NWC-164, 36 p.
- National Marine Fisheries Service. 1989. Fisheries of the United States, 1988. U.S. Dep. Commer., Current Fish. Stat. No. 8800, May 1989, 116 p.
- Terry, J. M., R. K. Kinoshita, and K. Landen. 1990. Economic status of the groundfish fisheries off Alaska, 1989. Unpubl. manuscr., 93 p. Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

APPENDIX

Table A1.--Export Categories of edible fishery products for 1989.

Product description

Frog legs, fresh/chill/frozen
Trout, excluding fillet, fresh/chill
Salmon, chinook, steaks, fresh/chill
 chinook, other prep. excl. fillet, fresh/chill
 chum, steaks, fresh/chill
 chum, other prep. excl. fillet, fresh/chill
 pink, steaks, fresh/chill
 pink, other prep. excl. fillet, fresh/chill
 sockeye, steaks, fresh/chill
 sockeye, other prep. excl. fillet, fresh/chill
 coho, steaks, fresh/chill
 coho, other prep. excl. fillet, fresh/chill
 Atlantic; Danube, steaks, fresh/chill
 Atlantic, Danube other prep. excl. fillet, fresh/chill
Salmonidae, nspf, fresh/chill excl. fillet
Flatfish, halibut, Greenland turbot, fresh/chill
 plaice, fresh/chill
 sole, fresh/chill
 nspf, fresh/chill
Tuna, albacore, fresh/chill
 yellowfin, fresh/chill
 skipjack, fresh/chill
 bluefin, fresh/chill
 nspf, fresh/chill
Herring, fresh/chill
Cod, fresh/chill
Sardine, sardinella, brisling, sprat, fresh/chill
Haddock, fresh/chill
Atlantic pollock, fresh/chill
Mackerel, fresh/chill
Shark, dogfish, fresh/chill
Eels, fresh/chill
Sablefish, fresh/chill excluding fillet
Fish, nspf, fresh/chill excluding fillet
Fish, nspf, liver & roe, fresh/chill
Salmon, chinook, steaks, frozen
 chinook, other prep. excl. fillet, frozen
 chum, steaks, frozen
 chum, other prep. excl. fillet, frozen
 pink, steaks, frozen
 pink, other prep. excl. fillet, frozen
 sockeye, steaks, frozen
 sockeye, other prep. excl. fillet, frozen
 coho, steaks, frozen
 coho, other prep. excl. fillet, frozen
 Pacific, nspf, steaks, frozen
 Pacific, nspf, other prep. excl. fillet, frozen

Table A1.—Continued.

Product description

Trout excluding fillet, frozen
Salmon, Atlantic, Danube steaks, frozen
Salmon, Atlantic, Danube other prep. excl. fillet, frozen
Salmonidae, nspf, steaks, frozen
Salmonidae, nspf, other prep. excl. fillet, frozen
Flatfish, halibut, Greenland turbot, frozen
 plaice, frozen
 sole, frozen
 nspf, frozen
Tuna, albacore, frozen
 yellowfin, frozen
 skipjack, frozen
 bluefin, frozen
 nspf, frozen
Herring, frozen
Cod, frozen
Sardine, sardinella, brisling, sprat, frozen
Haddock, frozen
Atlantic pollock, frozen
Mackerel, frozen
Shark, dogfish, frozen
Eels, frozen
Sea bass, frozen
Whiting, hake, frozen
Mullet, frozen
Butterfish, frozen
Sablefish, frozen
Fish, nspf, frozen
Sturgeon roe, frozen
Herring roe, frozen
Salmon, nspf, roe, frozen
Fish, nspf, liver & roe, frozen
Fish, nspf, fillet, fresh/chill/frozen
Cod fillet, frozen
Flatfish, halibut fillet, frozen
Fish, nspf, fillet, frozen
Fish, nspf, fillet, other
Fish meal for human consumption
Salmon, nspf, roe, cured
Herring roe, cured
Fish, nspf, liver & roe, cured
Fish, nspf, fillet, dried/salted/brined not smoked
Salmon, Pacific, Atlantic, Danube, smoked incl. fillet
Herring, smoked incl. fillet
Fish, nspf, smoked incl. fillet
Cod, dried whether or not salted, not smoked
Fish, nspf, dried whether or not salted, not smoked

Table A1.—Continued.

Product description

Herring, salted not dried or smoked
Cod, salted not dried or smoked
Anchovy, salted not dried or smoked
Fish, nspf, salted not dried or smoked
Lobster, rock, frozen
Lobster (Homarus spp.), frozen
Shrimp, frozen
Crab, nspf, frozen
Crawfish, freshwater, frozen
Crustaceans, nspf, frozen
Lobster, rock, live/fresh/chill/dried/salted/brined
Lobster (Homarus spp.), live/fresh/chill/dried/salted/brined
Shrimp, live/fresh/chill/dried/salted/brined
Crabmeat, nspf, fresh/chill/dried/salted/brined
Crab, nspf, live/fresh/chill/dried/salted/brined
Crustaceans, nspf, live/fresh/chill/dried/salted/brined
Oysters, live/fresh/chill/frozen/dried/salted/brined
Scallops, live/fresh/chill
Scallops, frozen/dried/salted/brined
Mussels, live/fresh/chill
Mussels, frozen/dried/salted/brined
Squid (loligo), live/fresh/chill
Squid, nspf, live/fresh/chill
Cuttlefish, live/fresh/chill
Squid (loligo), frozen/dried/salted/brined
Squid, nspf, frozen/dried/salted/brined
Cuttlefish, frozen/dried/salted/brined
Octopus, live/fresh/chill
Octopus, frozen/dried/salted/brined
Snail, other than sea snail, live/fresh/chill/frozen/salted
Sea urchin, live/fresh/chill
Conch, live/fresh/chill
Molluscs, nspf, live/fresh/chill
Clam, frozen/dried/salted/brined
Molluscs, nspf, frozen/dried/salted/brined
Fish, shellfish, nspf, juice
Salmon, nspf, canned in oil
 chum, canned not in oil
 pink, canned not in oil
 sockeye, canned not in oil
 nspf, canned not in oil
 nspf, prepared/preserved not in airtight container
Herring, prepared/preserved
Sardine, sardinella, brisling, sprat, prepared/preserved
Tuna, nspf, prepared/preserved
Mackerel, prepared/preserved
Anchovy, prepared/preserved

Table A1.—Continued.

Product description

Fish sticks, similar products, prepared/preserved
 Fish, nspf, prepared/preserved
 Analog product containing shellfish
 Fish balls, cakes, pudding, prepared/preserved
 Fish sticks, similar products, prepared/preserved
 Fish sticks, similar products
 Caviar, caviar substitute, prepared/preserved
 Analog product containing crab
 Crabmeat, king in airtight container
 snow (opilio) in airtight container
 snow, other in airtight container
 Dungeness in airtight container
 nspf, in airtight container
 king, frozen
 snow (opilio), frozen
 snow, other, frozen
 Dungeness, frozen
 nspf, frozen
 nspf, other preparations
 Crab, nspf, other preparations
 Analog product containing shrimp
 Shrimp, frozen in airtight containers
 frozen
 canned
 other preparations
 Analog product containing lobster
 Lobster in airtight container
 Lobster, other preparations
 Analog product containing crustaceans, nspf
 Crustaceans, nspf, prepared/preserved
 Analog product containing molluscs/other, nspf
 Clam, prepared/preserved
 Abalone, prepared/preserved
 Scallops, prepared/preserved
 Squid (loligo), prepared/preserved
 Squid, nspf, prepared/preserved
 Molluscs, nspf, prepared/preserved
 Soups, broths based on fish or other seafood

nspf - Not specifically provided for.

Sources: U.S. Dep. Commer., Bur. of the Census; U.S. Dep. of
 Treasury, Bur. of Customs; and available from Alaska Fish.
 Sci. Cent, 7600 Sand Point Way N.E., BIN C15700, Seattle,
 WA 98115-0070.

Table A2.--Export categories of edible fishery products from the Pacific Northwest for 1987-88, and the years for which data have been collected for that category.

Product description	Year
Herring, whole or dressed, fresh or frozen	1981-88
Pollock, whole or dressed, fresh or frozen	1981-88
Sablefish, whole or dressed, fresh or frozen	1981-88
Salmon, Chinook, whole or dressed, fresh or frozen	1981-88
Chum, whole or dressed, fresh or frozen	1981-88
Pink, whole or dressed, fresh or frozen	1981-88
Silver, whole or dressed, fresh or frozen	1986-88
Sockeye, whole or dressed, fresh or frozen	1981-88
Unclassified, whole or dressed, fresh or frozen	1986-88
Unclassified, whole or dressed, fresh or frozen	1986-88
Halibut, whole or dressed, fresh or frozen	1986-88
Other fish, whole or dressed, fresh or frozen	1986-88
Salmon fillets, steaks, portions, fresh or frozen	1978-88
Herring fillets, steaks, portions, fresh or frozen	1981-88
Halibut fillets, steaks, portions, fresh or frozen	1986-88
Cod fillets, steaks, portions, fresh or frozen	1986-88
Other fish fillets, steaks, portions, fresh or frozen	1986-88
Cod, dried, salted, or smoked	1986-88
Salmon, dried, salted, or smoked	1986-88
Other fish, dried, salted, or smoked	1986-88
Salmon, canned, Chum	1981-88
Pink	1981-88
Sockeye	1981-88
Other	1981-88
Other canned fish	1978-88
Fish in airtight containers but not canned	1978-88
Fish sticks and portions, breaded or batter coated	1978-88
Herring roe	1981-88
Salmon roe	1981-88
Other fish roe	1981-88
Fish balls, cakes, pudding, etc., fresh or frozen	1978-88
Shrimp, fresh or frozen	1985-88
Scallops, fresh or frozen	1986-88
King crab, frozen	1978-88
Snow crab, <u>opilio</u> , frozen	1986-88
Snow crab, other, frozen	1986-88
Dungeness, crab, frozen	1986-88
Crabs, other, frozen	1986-88
Shellfish, other, fresh or frozen	1986-88
Shellfish, other, canned	1985-88
Shellfish, other, includes cured not canned	1978-88

Sources: U.S. Dep. Commer., Bur. of the Census; U.S. Dep. of Treasury, Bur. of Customs; and available from Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle WA 98115-0070.

Table A3.--Scientific names of species identified in this report.

Common name	Scientific name
FISH	
Cod, Pacific	<u>Gadus macrocephalus</u>
Flounders and soles	<u>Pleuronectidae</u> family
Halibut, Pacific	<u>Hippoglossus stenolepis</u>
Herring, Pacific	<u>Clupea harengus pallasii</u>
Mackerel, Atka	<u>Pleurogrammus monopterygius</u>
Perch, Pacific ocean	<u>Sebastes alutus</u>
Pollock, walleye	<u>Theragra chalcogramma</u>
Rockfish	<u>Sebastes</u> and <u>Sebastolobus</u> species
Sablefish	<u>Anoplopoma fimbria</u>
Salmon, Pacific	<u>Oncorhynchus</u> species..
Chinook	<u>O. tshawytscha</u>
Chum	<u>O. keta</u>
Coho	<u>O. kisutch</u>
Pink	<u>O. gorbuscha</u>
Sockeye	<u>O. nerka</u>
Turbot, Greenland	<u>Reinhardtius hippoglossoides</u>
Whiting (hake), Pacific	<u>Merluccius productus</u>
CRUSTACEANS	
Crab, Dungeness	<u>Cancer magister</u>
Crab, king	<u>Lithodes</u> and <u>Paralithodes</u> species
Crab, snow (Tanner)	<u>Chionoecetes bairdi</u> and <u>opilio</u>
Shrimp	<u>Pandalus</u> , <u>Pandalopsis</u> , and <u>Crangon</u> species

Table A4.--Pacific Northwest exports of all product forms of salmon by country of destination, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Country	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Japan	253.4	283.0	+12	\$778.3	\$706.0	-9
Canada	17.8	45.1	+153	39.1	66.5	+70
United Kingdom	23.2	24.4	+5	62.0	53.9	-13
Australia	6.1	6.9	+14	15.1	15.5	+3
France	10.8	8.5	-21	29.7	13.9	-53
Netherlands	2.7	4.3	+55	7.5	7.5	+1
Belgium & Luxembourg	1.7	1.9	+10	5.7	3.5	-38
Sweden	1.2	2.1	+76	2.4	2.9	+19
Fed. Rep. of Germany	1.5	0.8	-47	5.1	1.4	-72
Denmark	2.9	0.7	-75	6.3	1.2	-81
Rep. of Korea	5.7	0.7	-88	9.4	1.0	-89
Hong Kong	0.5	0.6	+19	1.2	0.8	-29
Italy	0.4	0.3	-24	1.4	0.6	-57
Thailand	0.0	0.6	+1467	0.1	0.6	+593
Other	1.5	0.8	-51	3.3	1.7	-49
Total	329.5	380.7	+16	\$966.6	\$877.1	-9

Note: Zero indicates less than 50,000 lb.
 Discrepancies in totals are due to rounding.
 Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Nat. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table A5. --Pacific Northwest exports of whole or dressed salmon by country of destination, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Country	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Japan	235.5	258.1	+10	\$691.7	\$621.0	-10
Canada	12.2	35.8	+194	24.7	45.3	+84
United Kingdom	7.2	7.2	+1	14.1	14.0	-1
France	10.3	8.0	-22	27.2	13.3	-51
Sweden	1.2	2.0	+74	2.4	2.7	+16
Netherlands	0.4	1.5	+247	1.2	2.4	+100
Belgium & Luxembourg	0.9	0.9	+5	3.6	1.9	-47
Fed. Rep. of Germany	1.3	0.8	-40	3.2	1.3	-59
Denmark	2.9	0.7	-75	6.2	1.1	-81
Rep. of Korea	5.7	0.6	-89	9.4	1.0	-90
Hong Kong	0.5	0.6	+21	1.1	0.8	-28
Italy	0.2	0.3	+21	1.1	0.5	-54
Thailand	0.0	0.5	+1350	0.1	0.5	+469
Australia	0.0	0.2	+1392	0.1	0.5	+360
Other	1.3	0.5	-65	2.9	0.9	-69
Total	279.7	317.8	+14	\$788.8	\$707.3	-10

Note: Zero indicates less than 50,000 lb.
 Discrepancies in totals are due to rounding.
 Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commr., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table A6.--Pacific Northwest exports of canned salmon by country of destination, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Country	Quantity			Value		
	1988	1989	% change	1988	1989	% change
United Kingdom	16.0	17.0	+6	\$47.9	\$39.6	-17
Canada	5.0	7.7	+52	12.7	17.2	+36
Australia	6.0	6.3	+4	14.8	14.4	-3
Netherlands	2.3	2.4	+5	6.3	4.6	-26
Belgium & Luxembourg	0.7	0.9	+26	1.8	1.6	-12
Japan	0.5	0.1	-76	1.6	0.4	-74
New Zealand	0.1	0.1	+59	0.2	0.2	+15
Other	0.1	0.1	+9	0.2	0.2	-6
Total	31.0	34.6	+12	\$85.8	\$78.1	-9

Note: Discrepancies in totals are due to rounding.
Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table A7. --Pacific Northwest exports of edible fishery products to Japan by product, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Whole or dressed						
Salmon						
Chinook	6.6	7.6	+14	\$ 24.1	\$ 21.4	-11
Chum	36.3	24.9	-31	65.2	34.2	-47
Pink	38.5	20.1	-48	63.5	21.7	-66
Coho	12.9	24.5	+89	40.6	49.8	+23
Sockeye	133.9	178.1	+33	481.9	488.3	+1
Unclassified	7.2	2.9	-60	16.3	5.7	-65
Subtotal	235.5	258.1	+10	691.7	621.0	-10
Groundfish						
Cod	NA	32.1	—	NA	35.9	—
Flatfish	NA	38.3	—	NA	52.0	—
Mackerel	NA	3.3	—	NA	1.6	—
Pollock	0.5	5.9	+1162	0.6	3.2	+404
Sablefish	40.9	47.5	+16	86.3	80.7	-7
Other	137.4	75.8	-45	138.6	72.8	-47
Subtotal	178.8	202.9	+13	225.5	246.2	+9
Herring	60.1	44.2	-26	64.9	30.3	-53
Other	1.3	2.5	+88	2.6	3.4	+32
Fillets and steaks						
Cod	8.7	0.3	-96	13.8	0.5	-96
Halibut	0.2	0.5	+146	0.4	0.6	+55
Salmon	0.5	5.9	+1140	0.9	13.3	+1356
Other	32.4	19.2	-41	31.1	16.9	-46
Subtotal	41.8	25.9	-38	46.2	31.2	-32
Smoked and salted	0.2	4.6	+1985	0.7	4.7	+558
Canned or prepared	0.5	0.3	-42	1.7	0.6	-61
Roe						
Herring	11.6	15.9	+38	26.0	21.5	-17
Salmon	16.8	17.9	+7	83.7	70.2	-16
Other	3.4	19.1	+470	9.6	61.2	+534
Subtotal	31.7	53.0	+67	119.4	152.9	+28

Table A7.—Continued.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Other						
Fillets, other	NA	18.3	—	NA	17.8	—
Fish meal for human	NA	22.7	—	NA	13.7	—
Balls, cakes, pudd.	35.8	40.2	+12	30.2	39.4	+30
Fish sticks, p/pres.	NA	5.9	—	NA	7.4	—
Fish sticks, other	NA	35.8	—	NA	30.0	—
Subtotal	35.8	122.9	+243	30.2	108.2	+258
Crab and crabmeat	60.3	75.0	+24	212.5	226.6	+7
Shellfish, other	1.7	1.9	+14	5.6	5.3	-4
Total	647.7	791.3	+22	\$1,400.9	\$1,430.6	+2

NA - Not available. p/pres. - Prepared or preserved.

Note: Discrepancies in totals are due to rounding.

Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table A8. --Pacific Northwest exports of edible fishery products to Canada by product, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Whole or dressed						
Salmon						
Chinook	0.6	1.0	+71	\$ 1.8	\$ 2.3	+26
Chum	6.0	4.0	-34	10.6	4.8	-54
Pink	1.3	19.0	+1398	2.0	16.9	+762
Sockeye	1.7	7.7	+343	4.5	14.4	+221
Coho	1.4	3.5	+152	3.3	5.7	+76
Unclassified	1.2	0.6	-50	2.6	1.3	-52
Subtotal	12.2	35.8	+194	24.7	45.3	+84
Herring	4.3	2.0	-53	2.5	0.8	-69
Halibut	3.8	7.3	+93	7.1	12.8	+79
Other	3.6	4.1	+16	5.0	5.0	0
Filletts and steaks	7.3	6.7	-9	11.6	9.8	-15
Roe	1.8	2.1	+18	3.3	3.0	-8
Canned						
Salmon						
Pink	2.1	3.1	+45	4.6	5.5	+18
Sockeye	2.0	4.1	+103	5.9	10.8	+83
Other	0.9	0.4	-50	2.1	0.9	-58
Subtotal	5.0	7.7	+52	12.7	17.2	+36
Other fish	1.0	1.9	+80	2.3	2.7	+21
Analog products	NA	4.1	—	NA	3.6	—
Crab and crabmeat	1.7	3.5	+102	7.0	9.7	+37
Shrimp	2.5	3.2	+29	9.3	9.9	+7
Shellfish, other	1.3	3.0	+127	4.9	7.4	+53
Total	44.6	81.4	+83	\$90.4	\$127.3	+41

NA - Not available.

Note: Discrepancies in totals are due to rounding.
Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table A9.--Pacific Northwest exports of edible fishery products to the United Kingdom by product, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Whole or dressed						
Salmon						
Chum	1.0	1.6	+71	1.9	2.1	+14
Pink	3.9	2.5	-35	8.1	5.2	-36
Sockeye	0.8	1.3	+59	2.4	3.1	+29
Other	1.5	1.8	+16	1.7	3.6	+110
Subtotal	7.2	7.2	+1	14.1	14.0	-1
Other	0.9	0.4	-55	1.0	0.7	-33
Fillets, stk. & other	2.6	1.9	-26	2.4	2.0	-18
Canned						
Salmon						
Chum	0.5	2.7	+425	1.2	5.0	+303
Pink	4.6	7.0	+51	11.2	14.7	+31
Sockeye	7.5	6.6	-12	23.8	18.3	-23
Other	3.4	0.7	-78	11.6	1.6	-86
Subtotal	16.0	17.0	+6	47.9	39.6	-17
Shellfish, all	0.2	0.1	-66	0.6	0.3	-53
Total	26.8	26.6	-1	\$66.0	\$56.5	-14

Note: Discrepancies in totals are due to rounding.
Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table A10. --Pacific Northwest exports of edible fishery products to the Republic of Korea by product, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Whole or dressed						
Herring	2.4	2.4	+3	\$ 2.5	\$ 0.9	-64
Salmon	5.7	0.6	-89	9.4	1.0	-90
Other	1.9	9.3	+402	1.1	5.3	+388
Fillets and steaks	3.4	1.3	-62	3.6	1.2	-68
Other	7.8	25.8	+232	6.7	25.5	+281
Roe	1.2	7.2	+517	1.6	15.2	+843
Shellfish, all	<u>3.7</u>	<u>1.5</u>	<u>-60</u>	<u>11.0</u>	<u>3.5</u>	<u>-68</u>
Total	25.9	48.2	+86	\$35.9	\$52.5	+46

Note: Discrepancies in totals are due to rounding.
Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table All.--Pacific Northwest exports of edible fishery products to France by product, quantity (million lb), value (million dollars), and percent change from 1988 to 1989.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Whole or dressed						
Salmon						
Chinook	0.6	0.1	-83	\$ 1.8	\$ 0.3	-85
Chum	3.8	3.0	-21	9.0	4.6	-49
Pink	2.1	2.0	-6	4.7	2.3	-51
Coho	2.2	2.8	+28	6.1	5.8	-6
Other	1.6	0.2	-89	5.6	0.4	-93
Subtotal	10.3	8.1	-22	27.2	13.3	-51
Other	0.2	0.7	+247	0.4	0.6	+45
Fillets and steaks	1.2	0.4	-66	1.5	0.6	-62
Other	0.2	1.2	+492	0.2	1.4	+811
Roe	0.3	0.2	-45	2.0	2.1	+7
Shellfish, all	—	0.0	—	—	0.0	—
Total	12.2	10.5	-14	\$31.2	\$18.0	-42

Note: Zero indicated less than 50,000 lb or \$50,000.
 Discrepancies in totals are due to rounding.
 Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.

Table A12.--Pacific Northwest exports of edible fishery products to Australia by product, quantity, (million lb), value (million dollars), and percent change from 1988 to 1989.

Product	Quantity			Value		
	1988	1989	% change	1988	1989	% change
Canned						
Salmon						
Pink	4.3	4.1	-4	\$ 9.2	\$ 8.5	-8
Sockeye	1.0	1.9	+82	3.2	5.4	+69
Other	0.7	0.3	-59	2.4	0.5	-79
Subtotal	6.0	6.3	+4	14.8	14.4	-3
Fish, other	0.2	0.8	+388	0.4	1.4	+268
Shellfish, all	0.0	0.1	+595	0.1	0.4	+387
Total	6.2	7.3	+17	\$15.3	\$16.2	+6

Note: Zero indicates less than 50,000 lb.
 Discrepancies in totals are due to rounding.
 Percentages are based on unrounded numbers.

Sources: U.S. Dep. Commer., Bur. of the Census; data base from Natl. Mar. Fish. Serv., Fish. Stat. Div., Silver Spring, MD 20910; Alaska Fish. Sci. Cent., 7600 Sand Point Way N.E., BIN C15700, Seattle, WA 98115-0070.